

10

ENTER PROGRAM NAME

ENTER PROGRAM DESCRIPTION

SUPPLIER NAME PICO

BUYER

14 DATE: FEBRUARY 6, 2001

16 MARKUP

18 BUILD RATE \$50.00

20 BUILD RATE \$50.00

22 LABOR RATE STRUCTURE

25 PRINT (SUPPLIER FORMAT)

ESTIMATED BY: YOUR NAME HERE

34

OP OR TAB #	NEW OR ALTER	TOOL NUMBER	NUMBER OF TOOLS	TOOL DESCRIPTION	TOOL COST	ADD-A TOOL
1	10	NEW	10	10		
2	10	NEW	20	20		
3	10	NEW	30	30		
4	10	NEW	40	40		
5	10	NEW	50	50		
6	10	NEW	60	60		
7	10	NEW	70	70		
8	10	NEW	80	80		
9	10	NEW	90	90		
10	10	NEW	100	100		
11	10	NEW	110	110		
12	10	NEW	120	120		
13	10	NEW	130	130		
14	10	NEW	140	140		
15	10	NEW	150	150		

Fig. 1

**NUMBER OF TOOLS**  
1

**OPERATION #**  
10

**NEW or ALTER**  
NEW

**TOOL NUMBER**  
10

**TOOL DESCRIPTION**  
10

**ITEM DESCRIPTION** 42  
Clamp Unit - Blade Type

**BUYER CODE** 44a  
03A.013

**SUPPLIER CODE** 44b  
P101.272

**ADD UNIQUE ITEM** 49

**ESTIMATE DETAIL LEVEL:**

MINIMUM 46a

BASIC 46b

DETAILED 46c

RESET

48 Info

44a ADD UNDO

Line	Code	Item Description	Build Quantity	Design Quantity
1	1008.0	Base Floor Type (sq. ft.)	1	4
2	03A.013	Clamp Unit - Blade Type	8	1
3	1043.0	Fixture Guarding	30	2
4	1058.0	Index (medium)	4	2
5	1069.0	Locator Part Rest (non nc/nylon)	4	2
6	1104.0	Pin (safety) Latch Type (manual)	4	4
7	1113.0	Riser/Bracket (small)	8	1
8	1064.0	Light Screen W/Brkts (4 ft)	1	1
9	1118.0	Switch W/Brkt Presence (PP)	2	1
10	1091.0	Panel Door # 1 W/Magnetics and Air Cond	1	1
11	1090.0	Panel 3 Tier Globe Light	1	1
12	1018.0	Cable 24 Pin Control	1	1
13	1024.0	Cable Tray W/Bracket (closed) (ft)	30	1
14	1074.0	Lube Points Installed	8	1
15	1094.0	Panel ECPL Placard W/4 Icons	1	1
16	1020.0	Cable 37 Pin Control	1	1
17	1033.0	Design (1A - Drawings) Medium	0	1

47 {

Tool Level Components				
1A	N/A	Valve Feeds	1	0
2A	N/A	Junction Boxes	2	0
3A	N/A	Remote I/O Boxes	3	0

**Controls information Estimator**

You will need to select a Zone Control PLC 5/60 2-Door Panel

	TOTAL
Valve Quantity	3
Hose Quantity	20
Field Tags	0
Distribution Block	19
Cable Assy	19

*Fig. 2a*

38a

**COMMON  
ASSEMBLIES:**

GEO STATION	WELDING ROBOT	LIFT ASSIST
PEDESTAL WELDER	DISPENSE ROBOT	ARTICULATING ARM
IDLE STATION	CONVEYOR	TORQUE TUBE
MATERIAL ROBOT	CONTROLS	ASSEMBLY FIXTURE

38

		MATERIAL	1.00
		HOURS	1.00
DESIGN		RATE	\$ 50.00
BUILD		RATE	\$ 50.00

DOES THIS TOOL HAVE CONTROLS? YES ☐

50

Total Build Labor Hours	Total Build Labor Hours	Total Material Cost
86.9	\$ 5.943	\$ 5.684
10.7	\$ 5.556	\$ 5.186
1.3	\$ 2.250	\$ 210
50.0	\$ 11.000	\$ 3.208
5.3	\$ 1.090	\$ 180
2.0	\$ 600	\$ 24
5.0	\$ 2.400	\$ 160
8.0	\$ 500	\$ 3.430
23.0	\$ 2.700	\$ 168
8.0	\$ 600	\$ 1.810
0.0	\$ 50	\$ 135
0.0	\$ -	\$ -
0.5	\$ 750	\$ 1.020
54.5	\$ 23.412	\$ 136
0.0	\$ -	\$ 250
0.0	\$ -	\$ -
0.0	\$ -	\$ -
255.1	\$ 56.851	\$ 21.601

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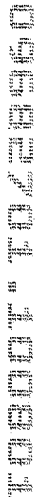
TOTAL	Info Links
\$ 15.377	info
\$ 22.218	
\$ 2.485	
\$ 34.740	
\$ 1.770	
\$ 1.124	
\$ 3.160	
\$ 4.457	
\$ 3.716	
\$ 20.260	
\$ 494	
\$ 917	
\$ 1 770	
\$ 60 280	
\$ 1.350	
\$ 1.134	
\$ -	
\$ 175.252	

0.4	\$ 45	\$ 57
1.2	\$ 170	\$ 32
2.2	\$ 480	\$ 216

...

\$ 254
\$ 1.277
\$ 5.187

*Fig. 26*

[illegible][illegible][illegible][illegible]

Purchased Material Cost	Raw Material Cost	Piping Labor Hours	Sub-Total Piping Labor	Piping Material	Sub-Total Piping Hours	Wiring Labor hours	Wiring Labor Sub-Total	Wiring Material Cost	Wiring Material Sub-Total	Try Out & Integration	Mechanical Design Hours	Control Design Hours
\$ 597	\$ 597	597	597	\$ 597	\$ 597	597	597	\$ 597	\$ 597	597	597	597

\$ 588 \$ -

1.00 16.2

2.00 1.00 \$ 40 \$ 20

0.50      0.25      \$      4      \$      2

1.00      1 00      \$      18      \$      18

0.90      0.30      \$      6      \$      2

4.85	4.85	\$	199	\$	199	1.00	\$	18
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0.00 1.25 \$ - \$ 31

S 1 -

§ 2

§ 43

§ 6

§ 8

### Clamp Design Estimate

- 68

### Clamp Dependency Tree

- 66

*Fig. 36*

**01A.042 Valve with stackable base**  
 A device used to actuate a clamp or other air powered device.

Labor

0.25

}

Material

\$ 115.00

**Comment:** The labor for this item is to select the valve and mount it to the valve stand.

*Fig. 4*

# 01D.010 VALVE SHORT STROKE - AIR

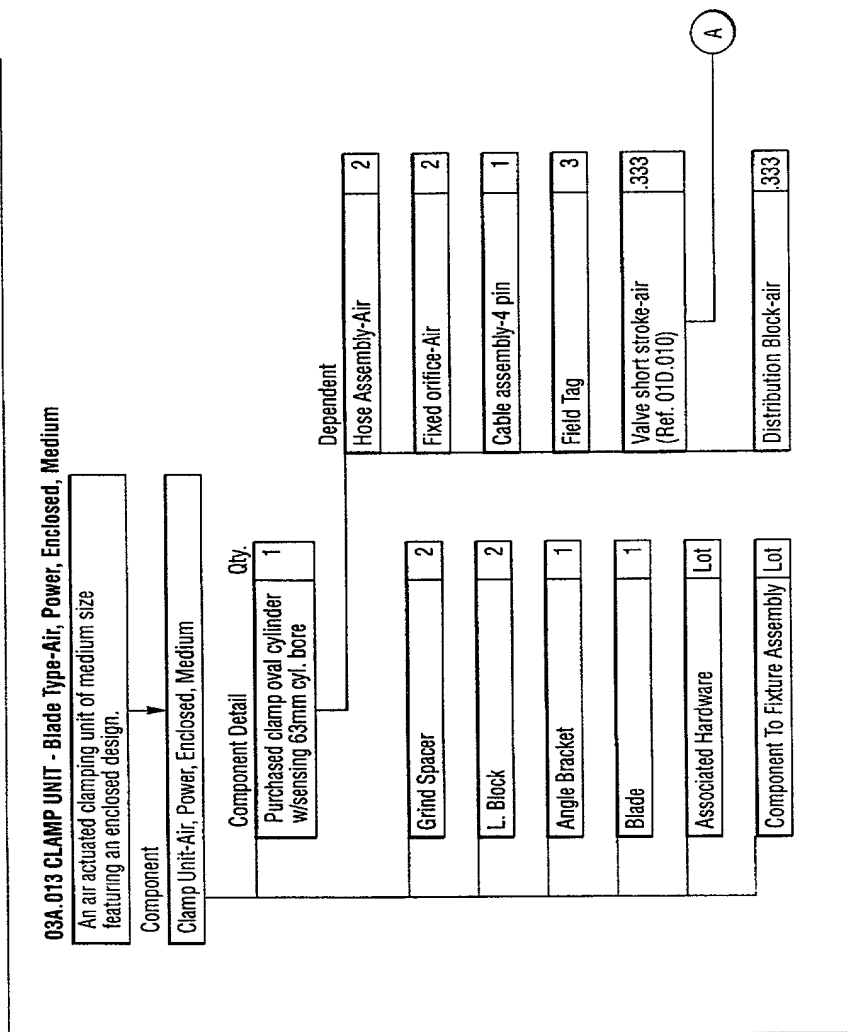
A double solenoid 4-way valve with base used to control cylinders of less than 6" stroke.

## Individual Component Database

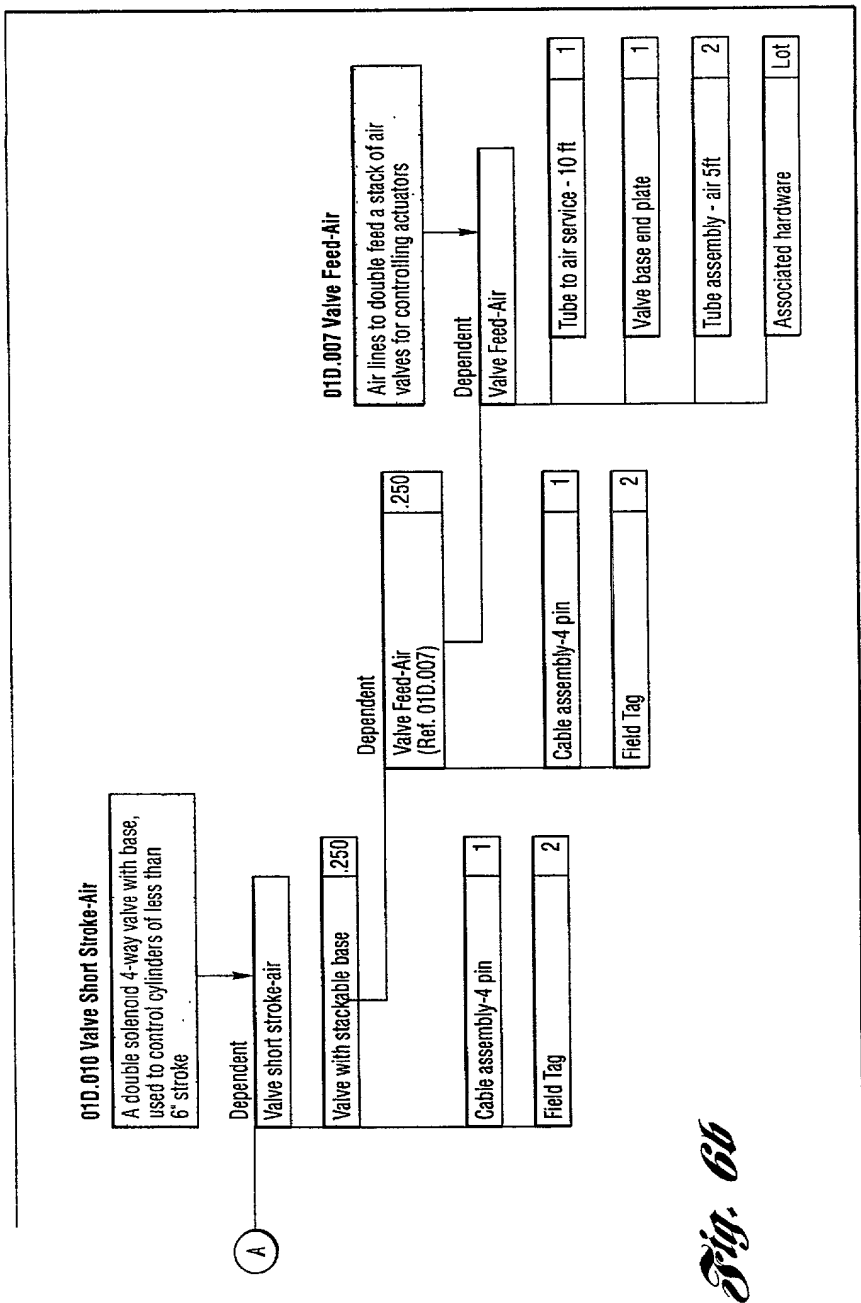
Component	Component Detail	Qty.	Piping Labor Each	Piping Material Each	Wiring Labor Each	Wiring Material Each	Total Piping Labor	Total Piping Material	Total Wiring Labor	Total Wiring Material
Valve Short Stroke	Valve with stackable base	1	0.25	\$ 115.00			0.25	\$ 115.00		
	82a									
	Dependent									
	Valve feed - air (Ref. 01D.007)	1.000	7.00	\$ 152.00			0.00	\$ -		
	250									
	86									
	Cable assembly - 4 pin	1			1.00	\$ 18.00			1.00	\$ 18.00
	Field tag	1	0.30	\$ 2.00			0.60	\$ 4.00		
	82n									
	Tube assembly - air 10'	2	2.00	\$ 40.00			4.00	\$ 80.00		
	Associated hardware	Lot	0.25	\$ 5.00			0.00	\$ -	1.00	\$ 18.00
	80						4.85	\$ 199.00	1.00	\$ 18.00

84

80



*Fig. 6a*



*Fig. 6b*

Reference Part **03a.013**  
Reference Drawing **Clamp Unit - Blade Type - Air Power, Enclosed, Medium**

Description	Sheet				Hours
Isometric View	1	OF	15		1.5
Exploded View	2	OF	15		1.25
Plan View	3	OF	15		1.25
Side View	4	OF	15		1.25
View X	5	OF	15		0.75
View Y	6	OF	15		0.75
View Z	7	OF	15		0.75
View W	8	OF	15		0.75
					8.25
<b>Riser</b>					
Solid Model Riser	9	OF	15		2.25
Detail Riser					0.5
Formal plot					0.5
					3.25
<b>Altered Clamp</b>					
Select and verify clamp & cylinder engineering	10	OF	15		0.25
Select and place cylinder					0.25
Select and place clamp unit					0.2
Solid model end of clamp					2
Detail Clamp Arm & Drawings					0.5
Formal plot					0.5
					3.7
B.O.M.	3	OF	3		3.7
.75 hr per sheet					
Investigation & Line Up					0.25

Total 16.20

Notes

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*Fig. 7*

COMPOSITE RATE:		Normal Operating Work Schedule: - 50 Hours/Week/DL Employee - 78 Weeks/Year/DL Employee		
COMPOSITE RATE:	Rate/Hour	Annual Cost/ Direct Labor Employee	(Assumed) Billable Crew Size	Total Annual Cost
Direct Labor	23.47	56,334	200	11,266,800
Overtime (10%)	2.35	5,663	200	1,126,680
Fringes (35%)	8.22	19,717	200	3,943,380
Indirect labor (includes fringes)	3.52	8,450	200	1,690,020
Equipment Depreciation	0.76	1,813	200	362,500
Facilities Depreciation	2.45	5,875	200	1,175,000
Other manufacturing Overhead	2.37	5,688	200	1,137,600
Prod. Dev. Hardware/Software	0.53	1,266	200	253,210
SG&A (9%)	3.72	9,295	200	1,858,923
Profit (5%)	2.25	5,628	200	1,125,681
Total:	\$ 49.63	119,699		23,939,794

Fig. 8

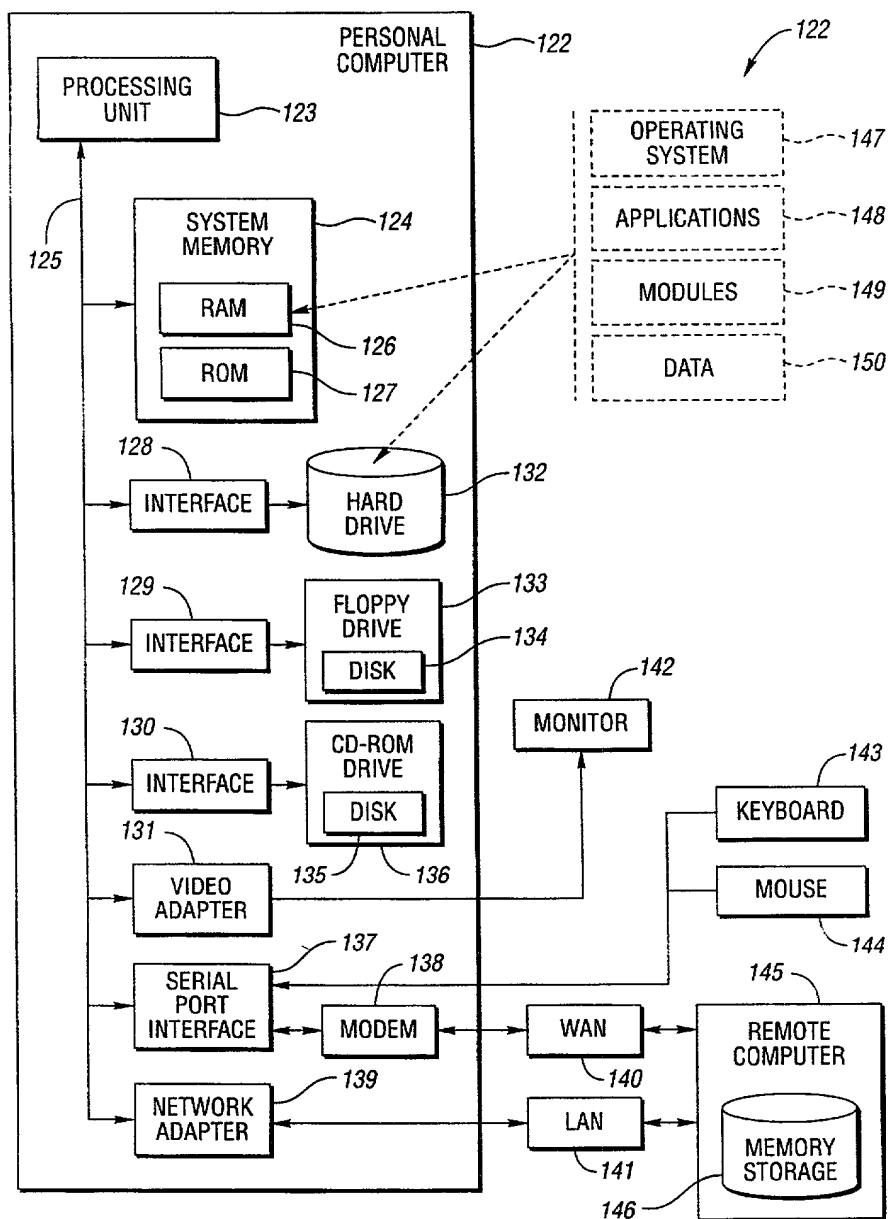
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Qty	Description	Mechanical Design	Controls Design	Total Build	Supplier Total Cost
1	Station #10 - Geometry Station	\$23,985	\$14,250	\$147,931	\$186,166
1	Station #20 - Material Handling Robot	\$9,100	\$3,000	\$23,367	\$35,467
1	Station #20 - Robot End Effector	\$14,495	\$2,500	\$15,136	\$32,131
1	Station #30 - Pedestal Weld Gun	\$7,605	\$3,500	\$46,974	\$58,079
1	Station #30 - Pivoting Tip Dresser Unit	\$780	\$1,000	\$19,051	\$20,831
	Subtotal:	\$31,980	\$10,000	\$104,528	\$146,508
1	Station #40 - Geometry Weld Station	\$24,310	\$13,250	\$138,156	\$175,716
1	Station #50 - Material Handling Robot	\$9,100	\$3,000	\$23,367	\$35,467
1	Clamp)	\$14,495	\$2,500	\$15,136	\$32,131
	Subtotal:	\$23,595	\$5,500	\$38,503	\$67,598
1	Station	\$12,935	\$6,000	\$43,449	\$62,384
1	Station #70 - Material Handling	\$13,000	\$4,000	\$60,245	\$77,245
1	Clamp)	\$14,495	\$2,500	\$15,136	\$32,131
	Subtotal:	\$27,495	\$6,500	\$75,381	\$109,376
1	Station #80 - Pedestal Sealer Unit	\$3,900	\$1,000	\$15,569	\$20,469
1	Station #90 - Belt Conveyor	\$3,250	\$1,750	\$60,271	\$65,271
Lot	System Safety Fencing	\$207	\$750	\$24,062	\$25,019
Lot	Cable Tray and Header Pipe	\$0	\$1,500	\$24,773	\$26,273
1	T-80 Panel	\$0	\$1,500	\$20,796	\$22,296
1	Robot Distribution Panel	\$0	\$0	\$7,118	\$7,118
1	Power Distribution Panel	\$0	\$10,000	\$25,791	\$35,791
	Subtotal:	\$207	\$13,750	\$102,540	\$116,497
	<b>Total Tooling Line Complete:</b>	<b>\$151,657</b>	<b>\$72,000</b>	<b>\$726,328</b>	<b>\$949,985</b>
	<b>Program Requirements</b>				
Lot	Advanced Engineering	\$31,023	\$15,488	\$0	\$46,511
Lot	Project Management	\$0	\$0	\$145,800	\$145,800
Lot	Part Monitor / Retrieval	\$0	\$0	\$27,000	\$27,000
Lot	Simultaneous Engineering	\$72,000	\$0	\$0	\$72,000
Lot	1A / System Layout - Key Sheet	\$13,500	\$0	\$0	\$13,500
Lot	Weld Studies	\$18,000	\$0	\$0	\$18,000
Lot	Computer Based B.S.C.C.	\$4,500	\$0	\$0	\$4,500
Lot	Process Simulation (Commodity)	\$30,225	\$0	\$0	\$30,225
Lot	Operation and Maintenance Manuals	\$0	\$0	\$58,041	\$58,041
Lot	ECPL Requirements - Energy Control	\$0	\$0	\$1,502	\$1,502
Lot	System Tryout (20 Hour Run)	\$0	\$0	\$4,320	\$4,320
Lot	Teardown and Preparation for Shipping	\$0	\$0	\$2,520	\$2,520
	<b>Total Program Requirements:</b>	<b>\$169,248</b>	<b>\$15,488</b>	<b>\$239,183</b>	<b>\$423,919</b>
	<b>Total Tooling Line Complete:</b>	<b>\$151,657</b>	<b>\$72,000</b>	<b>\$726,328</b>	<b>\$949,985</b>
	<b>Pricing Index Total:</b>	<b>\$320,905</b>	<b>\$87,488</b>	<b>\$965,511</b>	<b>\$1,373,904</b>

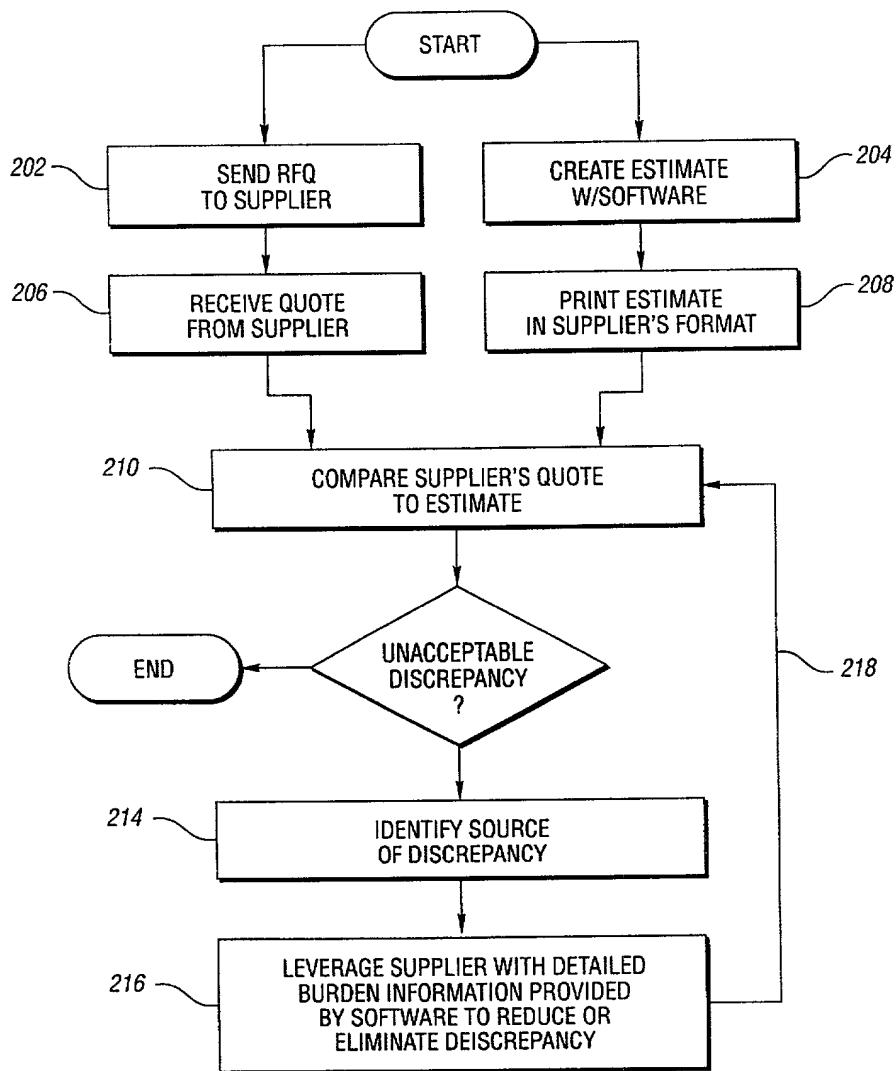
Fig. 9a

	QTY	DESIGN TOTAL	BUILD TOTAL	TOOL SUBTOTAL	TOOL TOTAL COST
GENERIC CELL QUOTE (L2)	1	\$231,358	\$707,522	\$938,880	\$938,880
GENERIC CELL QUOTE (L2)	1	\$223,062	\$601,342	\$824,404	\$824,404
GENERIC CELL QUOTE (L2)	1	\$223,062	\$601,342	\$824,404	\$824,404
STATION #10- GEOMETRY STATION	1	\$39,010	\$124,774	\$163,784	\$163,784
ROBOT	1	\$23,009	\$38,569	\$61,578	\$61,578
STATION #30- PEDESTAL WELDER	1	\$24,789	\$39,667	\$64,456	\$64,456
STATION #40- GEOMETRY STATION	1	\$24,178	\$114,586	\$138,764	\$138,764
ROBOT	1	\$12,290	\$30,082	\$42,372	\$42,372
STATION #60- HOLDING FIXTURE/ ROBOT	1	\$7,967	\$29,923	\$37,890	\$37,890
STATION #70- M/H & WELDING ROBOT	1	\$22,768	\$78,321	\$101,089	\$101,089
STATION #80- DISPENSE STATION	1	\$2,157	\$7,119	\$9,276	\$9,276
STATION #90- CONVEYOR	1	\$6,770	\$30,682	\$37,452	\$37,452
SYSTEM	1	\$60,123	\$107,616	\$167,739	\$167,739
LINE CONTROLS	1	\$12,300	\$63,281	\$75,581	\$75,581
SAFETY FENCE COMPLETE	1	\$1,742	\$24,430	\$26,172	\$26,172
SAFETY FENCE PER FT.	180	\$1,245	\$23,154	\$24,399	\$24,399
SAFETY GATE, 3 FT.	3	\$498	\$1,276	\$1,774	\$1,774
SYSTEM DESIGN REQUIREMENTS	1	\$46,080	\$0	\$46,080	\$46,080
ECTA AND TOOL SHEETS	1	\$5,033	\$0	\$5,033	\$5,033
TRAINING SUPPORT COST	1	\$10,056	\$0	\$10,056	\$10,056
CONTROLS LINE-UP	1	\$2,173	\$0	\$2,173	\$2,173
ERGONOMICS STUDY	1	\$3,872	\$0	\$3,872	\$3,872
FMEA	1	\$4,425	\$0	\$4,425	\$4,425
PDGS	1	\$4,346	\$0	\$4,346	\$4,346
PROCESS SIMULATION	1	\$2,173	\$0	\$2,173	\$2,173
PROCESS VERIFICATION	1	\$1,086	\$0	\$1,086	\$1,086
STUD CLEARANCE STUDY	1	\$0	\$0	\$0	\$0
SEALANT STUDY	1	\$1,659	\$0	\$1,659	\$1,659
WELD STUDY	1	\$3,651	\$0	\$3,651	\$3,651
SYSTEM LAYOUT	1	\$7,606	\$0	\$7,606	\$7,606
TEARDOWN AND TRYOUT OF SYSTEM	1	\$0	\$19,905	\$19,905	\$19,905
TRYOUT	1	\$0	\$13,204	\$13,204	\$13,204
TEARDOWN	1	\$0	\$6,701	\$6,701	\$6,701
FULL SERVICE SUPPLIER REQUIREMENTS	1	\$8,297	\$106,181	\$114,478	\$114,478
ADVANCED ENGINEERING	1	\$8,297	\$0	\$8,297	\$8,297
ENGINEER - ( 1 MAN, 3 WEEKS )	1	\$8,297	\$0	\$8,297	\$8,297
PROJECT MANAGEMENT	1	\$0	\$84,732	\$84,732	\$84,732
PROJECT MANAGER( 1 MAN, 24 WEEKS )	1	\$0	\$84,732	\$84,732	\$84,732
VENDOR TOOL TRY-OUT & RUNOFF	1	\$0	\$21,449	\$21,449	\$21,449
TECHNICIAN MECHANICAL( 1 MAN, 2 DAYS )	1	\$0	\$5,268	\$5,268	\$5,268
TECHNICIAN PNEUMATIC( 1 MAN, 2 DAYS )	1	\$0	\$5,268	\$5,268	\$5,268
TECHNICIAN ELECTRICAL( 1 MAN, 2 DAYS )	1	\$0	\$5,268	\$5,268	\$5,268
TECHNICIAN ROBOTIC( 1 MAN, 2 DAYS )	1	\$0	\$5,645	\$5,645	\$5,645

*Fig. 9b*



*Fig. 10*



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*Fig. 11*